IN THE UNITED STATES PATENT AND TRADEMARK OFFICE	
In re the application of: BOUET-GRIFFON, Myriam	Attorney Docket No.: 2901683-000026 BR 3565
	Confirmation No.: 6015
Application Serial No.: 10/561,010	Group Art Unit: 1793
Filed: April 18, 2007	Examiner: LEE, Rebecca Y.
For: Autobody Skin Piece Made of an Al-Si-Mg Sheet Metal Alloy and Fixed to a Steel Structure	

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Filed via EFS

Members of the Panel:

This paper is submitted in response to the final Office action mailed August 5, 2010. Accordingly, a timely response is due on or before October 5, 2010 with a concurrently-submitted Notice of Appeal.

Claim Status

Claims 1, 3-5, and 7-20 are pending in this application. The claims are drawn to, *inter alia*, an auto body roof comprising at least one steel frame and a skin part comprising an aluminum alloy attached to the steel frame before painting, wherein after solution treatment, quenching and age-hardening for three weeks at room temperature, said sheet has yield strength $R_{0,2}$ of less than 170 MPa and has a high temperature yield strength, at the beginning of a paint baking heat treatment after a temperature rise, of at least 160 MPa. In the final Office action mailed August 5, 2010, claims 11 and 14-19 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over JP 2002-371333 ("Sato"), and claims 1, 3-5, 7-10, 12, 13, and 20 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Sato in view of U.S. Patent No. 6,678,936 ("Izumi"). These rejections are respectfully traversed for at least the following reasons.

Argument

1. Sato does not teach or suggest the claimed alloys.

A. The broad composition ranges of Sato do not teach or suggest selecting the claimed composition ranges to achieve alloys with the physical properties desired or claimed.

Independent claims 11 and 14 recite, *inter alia*, that "after solution treatment, quenching and age-hardening for three weeks at room temperature, said sheet has yield strength $R_{0.2}$ of less than" 170 MPa or about 160 MPa, respectively, and has a high temperature yield strength, at the beginning of a paint baking heat treatment after a temperature rise, of at least 160 MPa (claims 11 and 15). These features are important because, for example, lower yield strength $R_{0.2}$ before heat treatment

improves the drawing formability of parts, while greater high temperature yield strength after temperature rise at the beginning of a paint baking heat treatment (typically 190°C) prevents the aluminum panel from forming aesthetically unacceptable kinks due to the differential thermal expansion between the aluminum panel and the steel frame of the vehicle and the high value (>200MPa) at the end of the paint baking heat treatment leads to improved dent resistance.[1] The Examiner indicated that Sato discloses compositions with ranges that overlap those claimed, but the Examiner has not provided any rationale to explain how or why Sato would lead one of ordinary skill in the art **to select** the particular composition ranges claimed, or to seek the physical properties claimed. The **composition of the present invention**, compared to the one of Sato, even if it is not the only key of the invention, **is a clear selection** to obtain the claimed properties.

None of the alloys shown by Sato have compositions within the ranges claimed.[2] Nor does Sato provide any teaching or suggestion that an alloy with the claimed properties could be produced. For example, all of the Sato compositions have Mn content outside the claimed range of 0.4-1.0, and Sato fails to teach or suggest that this range produces yield strengths greater than 200 MPa at the end of heat treatment.[3] Thus, Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness, and respectfully requests that the Panel withdraw this rejection.

B. Sato neither teaches nor suggests the advantages of the claimed alloys.

Claim 11 recites, *inter alia*, an "[a]uto body part comprising at least one part made of steel and at least one skin part made of an aluminum alloy attached to the steel part before painting". Because aluminum expands at a different rate than steel when exposed to elevated temperatures — such as those used in paint baking or electrophoresis steps — aluminum tends to deform during paint baking or electrophoresis. This leads to kinks and other aesthetically and commercially unacceptable deformities.[4]

Applicant showed previously, with the Declaration of Dr. Guiglionda, that alloys with compositions lying outside the ranges stated for Si, Fe, Cu, Mn, Mg, Zn, Cr, Zr, and Ti do not possess the physical properties required by the instant claims.[5] For example, comparative alloys 6011 and 6016 from the instant specification lie within the ranges of Sato, but not within the ranges

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[1] *See* Spceification, 7:14-17 (Dec. 16, 2005).

[2] *See, e.g.*, Sato (translation) at TABLE 1.

[3] *See, e.g.*, *id.*; *cf.* Specification, 3:29-4:13.

[4] *See* Specification, 4:5-13.

[5] *See, e.g.*, Declaration of Guiglionda (Feb. 19, 2010).

of the instant claims. As with other alloys having compositions outside the ranges claimed, alloys 6011 and 6016 do not posses the properties required by the instant claims, as shown by the comparison below:

	Si	Fe	Cu	Mn	Mg	Zn	Cr	Other	$R_{0.2}$ T4	$R_{0.2}$ electro-phoresis
Instant Claims	0.7-1.3	< 0.5	0.8-1.1	0.4-1.0	0.6-1.2	< 0.7	< 0.25	Zr+Ti < 0.2	< 170	> 160
Sato	0.4-1.8	0.02-0.5	0.1-1.5	0.03-1.5	0.2-1.6	0.05-6.0	0.02-0.5	ok		
Alloy 6111	0.63	0.11	0.69	0.17	0.78	—	0.07	—	179	159
Alloy 6016	1.00	< 0.3	0.13	0.12	0.30	—	0.03	—	97-126	100-128
Alloy 6056	0.85	0.07	1.0	0.45	0.75	0.16	0.02	—	169	168

Alloy 6111 has yield strength of 179 MPa after three weeks (outside the limit claimed) and of 159 MPa at the beginning of the electrophoresis treatment (outside the limit claimed).[6] While alloy 6016 has yield strength of between 97 and 126 MPa after three weeks (within the limit claimed), at the beginning of the electrophoresis treatment the yield strength is between 100 and 128 MPa (outside the limit claimed).[7] In contrast, the composition of Alloy 6056 lies within the ranges of the instant claims, and has yield strength after three weeks of 169 MPa, and improved mechanical resistance at 190°C both at the beginning (168 MPa) and at the end (223 MPa) of the electrophoresis treatment, with a 16% increase in yield strength.[8] Thus, even if a *prima facie* case of obviousness could be established in view of Sato, which as discussed above, has not been established, it is overcome by the unexpectedly superior qualities of the alloys of the instant claims.

C. Sato neither teaches nor suggests the yield strengths of claims 16 and 17.

Sato nowhere teaches or suggests an alloy wherein, after solution treatment, quenching, and age-hardening for three weeks at room temperature, said alloy has yield strength $R_{0.2}$ of less than about 160 MPa and a high temperature yield strength at the end of being subjected to a paint baking heat treatment of greater than about 200 MPa (as in claim 16), or a low temperature yield strength after being subjected to a paint baking treatment that is greater than about 220 MPa (as in claim 17).

[6] *See* Specification, 7:11-8:4.

[7] *See id.*

[8] *See id.* at 6:12-8:4.

Sato provides no motivation to one of ordinary skill in the art to select alloys within the claimed ranges to produce alloys with the claimed properties. Thus, Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness, and respectfully requests that the Panel withdraw this rejection.

Consequently, claims 11 and 14-19 are not rendered obvious by Sato. Accordingly, Applicant respectfully requests favorable reconsideration and withdrawal of the rejection of claims 11 and 14-19 under 35 U.S.C. § 103.

2. Sato in view of Izumi does not teach or suggest the claimed alloys.

A. Izumi does not remedy the deficiencies of Sato because it does not teach the claimed yield strengths.

For the same reasons set out above, Applicant respectfully submits that Sato does not teach or suggest the alloys of the present claims. Izumi was cited for teaching that "aluminum alloys would be used as a body roof".[9] Thus, Izumi does not add anything to remedy the aforementioned deficiencies of Sato. For example, Izumi does not teach or suggest an alloy with the claimed physical properties. Moreover, Izumi specifically teaches avoiding electrophoresis of said alloys and the elevated temperatures associated with electrophoresis. Applicant respectfully submits that the combination of Sato and Izumi does not establish a *prima facie* case of obviousness.

B. The high temperature yield strengths of compositions according to Sato in view of Izumi are less than those of the instant claims, so do not have the physical properties desired or claimed.

Nor does the combination of Sato and Izumi teach or suggest the advantages of the claimed alloys. Independent claim 1 recites, *inter alia*, that "said sheet has yield strength $R_{0.2}$ of less than 170 MPa and has a high temperature yield strength, at the beginning of a paint baking heat treatment after a temperature rise, of at least 160 MPa." As shown above, Alloy 6011 (whose composition lies within the ranges of Sato, but outside the claimed ranges) has a low temperature yield strength of 179 MPa, which is greater than the claimed range, and a high temperature yield strength of 159 MPa, which is lower than the claimed range. Alloy 6016 (whose composition lies within the ranges of Sato, but outside the claimed ranges) has a low temperature yield strength between 97 and 126 MPa, which is within the claimed range, but its high temperature yield strength is between 100 and 128 MPa, which is below the claimed range. Thus, even if a *prima facie* case of obviousness could be established in view of Sato, Izumi, and the combination thereof, it is overcome by the unexpectedly superior qualities of the alloys of the instant claims.

[9] Office Action, 6 (Apr. 13, 2010) (citing Izumi, col. 1:13-23).

C. Sato neither teaches nor suggests the yield strengths of claims 3 and 4.

Sato nowhere teaches or suggests an alloy wherein, after solution treatment, quenching, and age-hardening for three weeks at room temperature, said alloy has yield strength $R_{0.2}$ of less than 170 MPa and either a high temperature yield strength at the end of a paint baking heat treatment of greater than 200 MPa (as in claim 16), or a low temperature yield strength after paint baking treatment that is greater than 220 MPa (as in claim 17). Sato provides no motivation to one of ordinary skill in the art to select alloys within the claimed ranges to produce alloys with the claimed properties. Thus, Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness, and respectfully requests that the Panel withdraw this rejection.

Consequently, claims 1, 3-5, 7-10, 12, 13, and 20 are not rendered obvious by Sato in view of Izumi. Accordingly, Applicant respectfully requests favorable reconsideration and withdrawal of the rejection of claims 1, 3-5, 7-10, 12, 13, and 20 under 35 U.S.C. § 103.

Conclusion

In view of the remarks above, Applicants respectfully submit that the stated grounds for rejection have been properly addressed and that all of the claims are patentable, and so request favorable action thereon. The Panel is invited to contact the undersigned if any additional information is required.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 50-4254, under Attorney Docket No. 2901683-000026.

Respectfully submitted,

BAKER, DONELSON, BEARMAN, CALDWELL & BERKOWITZ, P.C.

DATED: October 4, 2010

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